

Notice of Allowability

Application No.

10/784,032

Examiner

Asok K. Sarkar

Applicant(s)

AULNETTE ET AL.

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 8/17/2005.
2. ☒ The allowed claim(s) is/are 1-6 and 8-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>8/17/2005</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

1. Applicant's explanation of the instant invention in pointing the difference with the cited prior art was found to be persuasive.

Allowable Subject Matter

2. Claims 1 – 6 and 8 – 21 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Claims 1 – 6 and 8 – 20 recite, inter alia, a method of producing a semiconductor structure having at least one support substrate and an ultrathin layer comprising the steps of bonding a support substrate to a source substrate, wherein the source substrate includes a front face and a zone of weakness below the front face that defines an useful layer, the useful layer being of sufficient thickness to withstand heat treatments without forming defects therein and at least about 300 nanometers thick so that it can be reduced in thickness to form the ultrathin layer, detaching the useful layer along the zone of weakness to obtain an intermediate structure including at least the transferred useful layer and the support substrate and treating the transferred useful layer to obtain an ultratllin layer on the support substrate that is suitable for use in applications in the fields of electronics, optoelectronics or optics. The art of record does not disclose or anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Claim 21 recites, inter alia, a method of producing a semiconductor structure having at least one support substrate and an ultrathin layer comprising the steps of bonding a support substrate to a source substrate, wherein the source substrate includes a front face and a zone of weakness below the front face that defines an useful layer, the useful layer being of sufficient thickness to withstand heat treatments without forming defects therein so that it can be reduced in thickness to form the ultrathin layer, detaching the useful layer along the zone of weakness to obtain an intermediate structure including at least the transferred useful layer and the support substrate, providing an intermediate layer on the support substrate or on the source substrate before the bonding step such that, after the detaching step, an alternate intermediate structure is obtained that includes the support substrate, the intermediate layer and the useful layer, treating the transferred useful layer to obtain an ultrathin layer on the support substrate that is suitable for use in applications in the fields of electronics, optoelectronics or optics and which further comprises treating the transferred useful layer by using at least one of chemical-mechanical polishing, annealing in an atmosphere containing hydrogen, argon or a mixture thereof, sacrificial oxidation, and chemical etching, wherein the intermediate layer is made of a material of at least one of silicon oxide, silicon nitride, a high permittivity insulating material, diamond, or a combinations of the materials, the useful layer is at least three times thicker than the ultrathin layer before treatment, and the ultrathin layer is equal to or less than about 100 nanometers thick following the treating step. The art of record does not disclose or

Art Unit: 2891

anticipate the above limitation in combination with other claim elements nor would it be obvious to modify the art of record so as to form a device including the above limitation.

Conclusion

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asok K. Sarkar whose telephone number is 571 272 1970. The examiner can normally be reached on Monday - Friday (8 AM- 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William B. Baumeister can be reached on 571 272 1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Application/Control Number: 10/784,032

Page 5

Art Unit: 2891

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Asok Kumar Sarkar

Asok K. Sarkar

September 7, 2005

Primary Examiner